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Applicant: Daizo Co., Ltd.

Title of Invention: Aerosol Composition for Hair

Disclosure A: (Column 1, lines 1 to 10)

"[Claims]

[Claim 1] An aerosol composition for hair which comprises an aqueous stock solution containing a resin and a pigment, and a liquefied gas, wherein when the aerosol composition is sprayed on hair and then dried, the thickness of the layer of the adhering product adhered to hair is 10  $\mu$  m or above.

[Claim 2] The aerosol composition according to claim 1 wherein the resin is contained in the aqueous stock solution in an amount of 10 to 30% by weight.

[Claim 3] The aerosol composition according to claim 1 or 2 wherein the neutralization of the resin is 15 to 110 %."

**PATENT ABSTRACTS OF JAPAN**

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**(54) AEROSOL COMPOSITION FOR HAIR**

**(57)Abstract:**

**PROBLEM TO BE SOLVED:** To provide an aerosol composition which is used for hair, can simply and quickly prevent that the scalp is looked through the hair, retains the effect for a long period, and does not give a foreign touch to the hair.

**SOLUTION:** This aerosol composition for the hair, comprising a liquidized gas and an aqueous undiluted solution containing a resin and a pigment, is characterized in that the thickness of the layer of an adhering product adhered to the hair is  $\geq 10 \mu\text{m}$ , when the hair is sprayed with the aerosol composition and then dried. The adhering product layer gives thickened hairs, a high close hair concentration, and a good voluminousness to the hair.

**CLAIMS**

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**[Claim(s)]**

[Claim 1]An aerosol composition for the hairs whose thickness of a deposit layer adhering to the hair at a time of making the hair breathe out and dry this aerosol composition it is an aerosol composition for the hairs which consists of an aquosity undiluted solution containing resin and paints, and a liquefied gas, and is not less than 10 micrometers.

[Claim 2]The aerosol composition for the hairs according to claim 1 which contains resin ten to 30% of the weight among an aquosity undiluted solution.

[Claim 3]The aerosol composition for the hairs according to claim 1 or 2 whose degree of neutralization of resin is 15 to 110%.

**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the aerosol composition for the hairs. When it breathes out on the hair and the hair dries in detail, the deposit layer more than specific thickness is formed, and it is related with the aerosol composition for the hairs which can make high density concentration of the hair high.

[0002]

[Description of the Prior Art] Those who care about that there is little hair expect a trichogenous effect and a fallen hair preventive effect by an easy method, and use a hair restorer in many cases. Since the hair restorer has blended a circulation accelerator, a hair mother cell activator, nutritional information, etc., said effect may be acquired, but before not all people have said effect and being able to check an effect, it will take time for a long time.

[0003] Although the method of on the other hand increasing the hair certainly or methods of hiding the fact that there is little hair include a wig and hair transplantation, there are also many people for whom cost becomes high compared with a hair restorer and who have resistance.

[0004] A staple fiber is sprinkled over the hair or the scalp and the interim methods of a hair restorer and a wig also include the method of fixing a staple fiber by the spray etc. which blended resin. In this method, it can prevent that the scalp is transparent and it looks simply for a short time. However, if it will flow and the staple fiber adhering to the scalp will fall easily, if the scalp sweats, and resin separates and falls even if it has adhered to the hair, in order that this staple fiber may also separate simultaneously and may fall, an effect is not maintained for a long time. With the hair and a staple fiber, since a hair type has a difference, he may feel uncomfortable.

[0005]

[Problem(s) to be Solved by the Invention] It can prevent easily that the scalp is transparent and this invention is visible in a short time, and an effect continues for a long time, and it is related with the aerosol composition for the hairs which does not give sense of incongruity to a hair type.

[0006]

[Means for Solving the Problem] As a result of repeating examination variously, an aerosol composition containing resin and paints was breathed out on the hair, and it found out that said problem was solvable by carrying out a deposit layer when the hair dries more than specific thickness.

[0007] That is, this invention is an aerosol composition for the hairs which consists of an aquosity undiluted solution containing resin and paints, and a liquefied gas, and thickness of a deposit layer adhering to the hair at a time of making the hair breathe out and dry this aerosol composition is related with an aerosol composition for the hairs which is not less than 10 micrometers.

[0008] As for resin, in said aerosol composition for the hairs, it is preferred to contain ten to 30% of the weight among an aquosity undiluted solution.

[0009] In said aerosol composition for the hairs, it is preferred that the degree of neutralization of resin is 15 to 110%.

[0010]

[Embodiment of the Invention] The aerosol composition for the hairs of this invention is

characterized by consisting of the aquosity undiluted solution and liquefied gas containing resin and paints, and setting the thickness of the deposit layer adhering to the hair at the time of making the hair breathe out and dry this aerosol composition to not less than 10 micrometers.

[0011]The deposit layer adhering to the hair is a deposit layer produced by the ingredient which makes an aerosol composition adhere to the hair and is contained in an aerosol composition drying on the hair, and it mainly consists of resin and paints. By this deposit layer, since one 1 hair becomes thick, the high density concentration of the hair becomes high, and a feeling of volume is obtained by the hair.

[0012]Although this deposit layer may adhere to the whole hair by uniform thickness uniformly, as there is a feeling of volume more, in order to show, it is preferred to make a deposit layer adhere locally and to make it adhere so that a deposit layer may have predetermined thickness further.

[0013]As thickness of this deposit layer, it is preferred that they are not less than 10 micrometers and not less than 15 more micrometers. Since one 1 hair will not become thick enough if the thickness of said deposit layer is thinner than 10 micrometers, change of the high density concentration of the hair is small, and the effect shown as the hair has a feeling of volume is hard to be acquired. As for the thickness of a deposit layer, although the maximum of the thickness of this deposit layer does not have restriction in particular, it is preferred that they are 100 micrometers or less and 80 more micrometers or less. If 100 micrometers is surpassed, the hairs will adhere to multiplex, and there is a tendency for a hairstyle to become unnatural. In order to change the thickness of the original hair by making resin and paints adhere to the hair in this invention, there is little change of a hair type compared with the conventional method to which a staple fiber is made to adhere.

[0014]The thickness ( $t$  (micrometer)) of a deposit layer processes the hair with the aerosol composition of this invention, and is computed using a formula (1) from the difference of the diameter ( $D$  (micrometer)) of the hair to which the affix adhered, and the unsettled diameter ( $d$  (micrometer)) of the hair.

[0015]

[Equation 1]

[0016]The resin contained in the aquosity undiluted solution of the aerosol composition of this invention is an ingredient for making the paints contained in this aquosity undiluted solution adhere to the hair, forming the deposit layer which has specific thickness, and showing one 1 hair thickly while itself adheres to the hair.

[0017]As said resin, for example A crotonic acid-vinyl acetate neo decanoic acid vinyl copolymer, Polyurethane, a dialkyl aminoethyl (meta) acrylate (meta) acrylic-acid-alkyl-ester copolymer, An acrylic acid octyl amide acrylic acid hydroxypropyl butyl methacrylate aminoethyl copolymer, A vinyl-pyrrolidone vinyl acetate copolymer, an acrylic acid hydroxyethyl butyl acrylate acrylic acid methoxy ethyl copolymer, Acrylic acid alkanolamine, vinyl-pyrrolidone N,N-dimethylaminoethyl methacrylic acid copolymer sulfate, Hydroxyethyl cellulose dimethyldiaryl ammonium chloride, an alkyl acrylate copolymer emulsion, an acrylic acid alkyl styrene copolymer emulsion, etc. are raised. Especially, it becomes a flexible affix and a crotonic acid-vinyl acetate neo

decanoic acid vinyl copolymer, polyurethane, and an alkyl acrylate copolymer emulsion are preferably used at a point excellent in the adhesion to the hair.

[0018]As for said resin, it is preferred among an aquosity undiluted solution to be blended further 12 to 25% of the weight ten to 30% of the weight by weight of solid content. When loadings of resin are less than 10 % of the weight, thickness of a deposit layer in the hair becomes thin, and there is a tendency that the hair cannot be shown thickly enough. On the other hand, when surpassing 30 % of the weight, it becomes difficult to exist in the stable state in an aquosity undiluted solution or an aerosol composition, and it deposits temporally or becomes easy to get it blocked with an aerosolvalve etc. There is a tendency which viscosity of an aquosity undiluted solution or an aerosol composition becomes high too much, and becomes difficult to deal with it.

[0019]As for said resin, it is preferred to use the time of aquosity undiluted solution preparation or a thing which is neutralized by alkali chemicals and has water solubility beforehand.

[0020]As said alkali chemicals, aminomethyl propanol, an aminomethyl propanediol, an aminoethyl propanediol, monoethanolamine, diethanolamine, triethanolamine, monoisopropanolamine, a potassium hydrate, etc. are raised, for example.

[0021]15 to 110% of the degree of neutralization in case said alkali chemicals neutralize said resin is desirable. It is preferred that it is further 20 to 105%. Since solubility over water of resin becomes low when the degree of neutralization is lower than 15%, it becomes unstable [ resin ] in an aquosity undiluted solution and an aerosol composition, and there is a tendency to become easy to deposit temporally. Since resin does not deposit on the other hand until solubility over water of resin becomes large too much and water dries when surpassing 110%, it becomes easy to adhere on the hair uniformly, and becomes difficult to form a deposit layer of predetermined thickness. There is a tendency for a deposit layer to flow with humidity, sweat, etc., to become easy to fall, for the pH of an aquosity undiluted solution to become alkalinity further easily, and for a stimulus to scalp and corrosiveness to a metal vessel filled up with an aerosol composition to become strong.

[0022]The degree of neutralization is computed using a formula (2).

[0023]

[Equation 2]

[0024]By adjusting time to blend many said resin with 10 to 30 % of the weight by solid content, and make the degree of neutralization of resin into 15 to 110%, and the specific range, and for resin deposit. Since resin deposits when resin deposits easily for a short time, for example, an aerosol composition is applied to the hair, or while applying and lengthening the aerosol composition using the \*\*\*\*\* brush etc., It adheres to the hair unevenly with the paints mentioned later, and the deposit layer more than specific thickness can be formed.

[0025]Said paints adhere to the hair with said resin, form a thick deposit layer, make the color of a deposit layer the hair and the same color further, and in order that a deposit layer may make it not conspicuous on the hair, they are used. Here, if a deposit layer is not conspicuous, it is not limited that the colors of a deposit layer are especially the hair and the same color.

[0026]As said paints, for example Carbon black, calamine, ultramarine, Yellow oxide of iron, black oxide of iron, chrome oxide, chromium hydroxide, a zinc oxide, magnesium oxide, Titanium oxide, calcium carbonate, a mica titan, bentonite, kaolin, Talc, a silicic acid anhydride, a magnesium silicate, aluminum silicate, mica, The litholrubin BCA (red No. 202), Lake Red C (red No. 203). Lake Red CBA (red No. 204), Lithol Red (red No. 205), Lithol Red CA (red No. 206), lithol-red-B A (red No. 207), Lithol Red SR (red No. 208), brilliant Lake Red R (red No. 219). Deep maroon (red No. 220) and toluidine red (red No. 221), Permanent Red (red No. 228), a permanent orange (orange No. 201), Bench gin orange G (orange No. 204), the bench gin yellow G (yellow No. 205), Brilliant Fast Scarlet (red No. 404), Permanent Red F5R (red No. 405), a HANZA orange (orange No. 401), Hansa Yellow (yellow No. 401), Copper phthalocyanine blue (blue No. 404) etc. are raised, and it is suitably chosen according to the color of the hair.

[0027]As for said paints, it is preferred among an aquosity undiluted solution to be blended further one to 15% of the weight 0.5 to 20% of the weight. When loadings of paints are less than 0.5 % of the weight, there is a tendency for a deposit layer to become white easily and for result condition to worsen. A deposit layer cannot become thick easily and an effect which makes high density concentration of the hair high is hard to be acquired. On the other hand, when 20 % of the weight is surpassed, there is a tendency to become easy to get it blocked with an aerosolvalve or an injection member.

[0028]Although an aquosity undiluted solution used for an aerosol composition of this invention contains said resin and paints, it is considered as a solvent which dissolves or distributes said resin and paints, and water is used. Especially as said water, although there is no limitation, purified water, ion exchange water, a physiological saline, etc. are raised.

[0029]Loadings of said water are a quantity which blends an ingredient etc. of resin, paints, lower alcohol mentioned later, a surface-active agent, an active principle, a color, and others, and makes the aquosity undiluted solution whole quantity 100 % of the weight.

[0030]Lower alcohol can be blended with said solvent, in order to adjust a volatilization rate of a solvent and to adjust time (a deposit layer is formed) for resin to deposit, and in order to make solubility of resin high.

[0031]As said lower alcohol, alcohol of the carbon numbers 2-5 of ethanol, propanol, isopropanol, isobutyl alcohol, t-butyl alcohol, etc. is raised, for example.

[0032]As for loadings of said lower alcohol, 3 to 50 % of the weight and further 5 to 40 % of the weight are preferred among an aquosity undiluted solution. When loadings of lower alcohol are less than 3 % of the weight, the volatilization effect by blending lower alcohol is hard to be acquired, and there is a tendency that a using feeling cannot be raised -- time to form a deposit layer becomes long. On the other hand, when 50 % of the weight is surpassed, the degreasing effect of scalp or the hair is strong, and there is a tendency to give a damage to scalp and the hair. Since a volatilization rate of a solvent becomes quick too much, a deposit layer serves as a lump easily on the hair. When carrying out the regurgitation especially by mist shape, before adhering to the hair, resin may deposit and there is a tendency which produces problems, such as becoming easy to separate even if it disperses, without adhering to the hair or adheres to the hair.

[0033]Furthermore, an ingredient of a surface-active agent, an active principle, a color, and others, etc. can be blended with said aquosity undiluted solution besides said resin,

paints, water, and lower alcohol.

[0034] Said surface-active agent is used for the purpose, such as a foaming agent, an emulsifier, fat liquoring oil, and a dispersing agent, and a non-ionic form surface-active agent, an anionic form surface-active agent, a cation form surface-active agent, a both sexes type surface-active agent, a polymer surfactant, a silicone series surface-active agent, etc. can be used for it.

[0035] As said non-ionic form surface-active agent, for example A sorbitan fatty acid ester, A glycerine fatty acid ester, a deca glycerine fatty acid ester, polyglyceryl fatty acid ester, Polyoxyethylene sorbitan fatty acid ester, polyoxyethylene sorbitol fatty acid ester, Polyoxyethylene glycerine fatty acid ester, polyethylene glycol fatty acid ester, Polyoxyethylene alkyl ether, polyoxyethylene polyoxypropylene alkyl ether, Polyoxyethylene alkyl phenyl ether, a polyoxyethylene-castor-oil-hydrogenated-castor-oil derivative, a polyoxyethylene \*\*\*\*\*-\*\*\*\*\* alcoholic yellow-bees-wax derivative, polyoxyethylene alkylamine fatty acid amide, etc. are raised.

[0036] As said anionic form surface-active agent, a saponification thing of fatty acid, alkyl sulfate, polyoxyethylene-alkyl-ether sulfate, an alkyl-phosphoric-acid salt, a polyoxyethylene-alkyl-ether phosphate, fatty acid soap, alpha-olefin sulfonate, etc. are raised, for example.

[0037] As said cation form surface-active agent, alkyl ammonium salt or an alkyl benzylammonium salt is raised, for example.

[0038] An acetic acid betaine, lecithin, etc. are raised as said both sexes type surface-active agent.

[0039] As said polymer type surfactant, copolymer of poly alkyl vinylpyridinium, an alkylphenol polymer derivative, a styrene maleic acid polymer derivative, alkyl vinyl ether, and maleic acid, etc. are raised.

[0040] As said silicone series surface-active agent, a polyoxyethylene methylpolysiloxane copolymer, a polyoxypropylene methylpolysiloxane copolymer, a poly (oxyethylene oxypropylene)-methylpolysiloxane copolymer, etc. are raised.

[0041] As for said surface-active agent, it is preferred among an aquosity undiluted solution to be blended further 0.5 to 10% of the weight 0.1 to 15% of the weight. An effect which blends a surface-active agent when loadings of said surface-active agent are less than 0.1 % of the weight is hard to be acquired, and especially, it is foamy, in carrying out the regurgitation, it excels in fizz, and a stable bubble becomes is hard to be obtained. On the other hand, when surpassing 15 % of the weight, using feelings, such as stickiness and stimulativeness to the skin, tend to worsen.

[0042] Said active principle is suitably chosen according to an effect, the purpose, etc. for which it asks, and A moisturizer, An ultraviolet ray absorbent, amino acid, vitamins, hormone, a circulation accelerator, a hair mother cell activator, a keratolytic drug, an antiseborrheic drug, an antiphlogistic sedative drug, penetration enhancer, various extracts, sterilization and an antiseptic, deodorization and a deodorizer, various perfume, etc. are raised.

[0043] As said moisturizer, for example A polyethylene glycol, propylene glycol, Glycerin, a 1,3-butylene glycol, diglycerol, collagen, Xylitol, sorbitol, chondroitin sulfate, hyaluronic acid, mucitinsulfuric acid, trichosanthes seed acid, sodium lactate, dl-pyrrolidone-carboxylic-acid salt, keratin, casein, lecithin, urea, etc. are raised.

[0044] As said ultraviolet ray absorbent, for example P aminobenzoic acid, p-

aminobenzoic-acid monoglycerol ester, Methyl ortho aminobenzoate, salicylic acid octyl, phenyl salicylate, Para methoxycinnamic acid isopropyl, Para methoxycinnamic acid octyl, 2,4-dihydroxybenzophenone, 2-hydroxy-4-methoxybenzophenone, etc. are raised.

[0045]As said amino acid, a glycine, an alanine, leucine, isoleucine, serine, tryptophan, cystine, cystein, methionine, aspartic acid, glutamic acid, arginine, histidine, lysine, hydroxylysine, etc. are raised, for example.

[0046]As said vitamins, for example Vitamin A oil, retinol, retinol palmitate, Inositol, pyridoxine chloride, nicotinic acid benzyl, nicotinamide, Nicotinic acid dl-\*\*-tocopherol, ascorbic acid magnesium phosphate, the vitamin D 2 (ergocalciferol), dl-\*\*-tocopherol, acetic acid dl-\*\*-tocopherol, pantothenic acid, biotin, etc. are raised.

[0047]As said hormone, ERASU truck diol, ethinylestradiol, etc. are raised, for example.

[0048]As said circulation accelerator, carpronium chloride, tocopherol, tocopherol acetate, capsicum tincture, cantharides tincture, a sialid extract, a garlic extract, nicotinic acid benzyl, etc. are raised, for example.

[0049]As said hair mother cell activator, vitamin A, vitamin B, vitamin C, biotin, calcium pantothenate, punt thenyl alcohol, etc. are raised, for example.

[0050]As said keratolytic drug, salicylic acid, resorcinol, etc. are raised, for example.

[0051]As said antiseborrheic drug, pyridoxine, lecithin, a diethylstilbestrol, sulfur, thioxolone, etc. are raised, for example.

[0052]As said antiphlogistic sedative drug, an azulene, allantoin, glycyrrhetic acid JIKARIUMU, diphenhydramine hydrochloride, hydrocortisone acetate, prednisone, etc. are raised.

[0053]As said penetration enhancer, d-limonene, l-menthol, alpha-bisabolol, etc. are raised, for example.

[0054]As said antioxidant, ascorbic acid, alpha-tocopherol, dibutylhydroxytoluene, burylhydroxyanisole, etc. are raised, for example.

[0055]As said various extracts, for example A Houttuynia extract, a cork tree bark extract, Glycyrrhiza extract, a peony extract, HECHIMAEKISU, a chinenae-cortex extract, the Clara extract, A primrose extract, a bara extract, lemon extract, an aloe extract, a calamus extract, a eucalyptus extract, a sage extract, a tea extract, a seaweed extract, placental extract, a silk extract, etc. are raised.

[0056]As said sterilization and antiseptic, a paraoxybenzoic acid, sodium benzoate, sorbic acid potassium salt, phenoxyethanol, a benzalkonium chloride, chloridation chlorhexidine, sensitization matter, hexachlorophene, PARAKURORU metacresol, etc. are raised, for example.

[0057]As said deodorization and deodorizer, lauryl methacrylate, a geranyl KUROTO rate, a myristic acid acetophenone, benzyl acetate, benzyl propionate, methyl benzoate, methyl phenyl acetate, etc. are raised, for example.

[0058]Although loadings of said active principle change with effects for which it asks, 0.01 to 20 % of the weight and further 0.05 to 15 % of the weight are preferred among an aquosity undiluted solution. When loadings of an active principle are less than 0.01 % of the weight, an effect of said active principle is hard to be acquired, and if 20 % of the weight is surpassed, on the other hand depending on an active principle, it may have influence which is not preferred on the hair or scalp.

[0059]It is used, in order that said color may dye the hair and may make a color of a deposit layer and the hair the same color more, and acid dye, a basic stain, an oil color,

fat dye, etc. are raised.

[0060]As said acid dye, for example Amaranthus (red No. 2), erythrosine (red No. 3), A new coccine (red No. 102), the phloxine B (red No. 104). A rose bengal (red No. 105), acid red (red No. 106), Tartrazine (yellow No. 4), sunset yellow (yellow No. 5), fast green (green No. 3), Brilliant blue FCF (blue No. 1), the indigo carmine (blue No. 2) litholrubin B (red No. 201). Fast acid magenta (red No. 227), eosine Y S (red No. 230), Phloxine BK (red No. 231), Rose Ben Cal K (red No. 232). Orange II (orange No. 205), erythrosine yellow NA (orange No. 207), Uranine (yellow No. 202), quinoline yellow WS (yellow No. 203), The ant ZANIN cyanine green F (green No. 201), PIRANIN concentrated (green No. 204), Light green SF yellow (green No. 205), the patent blue NA (blue No. 202), patent blue (blue No. 203), alpha ZURIN FG (blue No. 205), resorcinol Brown (and color No. 201), BIORAMINR (red No. 401), ponceau 3R (red No. 502), Ponceaux (red No. 503), ponceau SX (red No. 504), the fast red S (red No. 506). The orange I (orange No. 402), the Poral yellow 5G (yellow No. 402), Naphthol Yellow S (yellow No. 403), meta-nil yellow (yellow No. 406), The fast light yellow 3G (yellow No. 407), the naphthol green B (green No. 401), the GINEA green B (green No. 402), ARIZU roll purple (purple No. 401), a naphthol blue black (black No. 401), etc. are raised.

[0061]As said basic stain, rhodamine B (red No. 213), rhodamine B acetate (red No. 214), etc. are raised, for example. As said oil color, for example Rhodamine B acetate (red No. 215), Tetrachloro tetrabromofluorescein (red No. 218), Sudan III (red No. 225), Diiodofluorescein (orange No. 206), fluorescein (yellow No. 201), Quinoline yellow SS (yellow No. 204), quinizarine green SS (green No. 202), ARIZU limper pull SS (purple No. 201), medicinal Scarlett (red No. 501), the oil red XO (red No. 505), orange SS (orange No. 403), the yellow AB (yellow No. 404), yellow alumnus (yellow No. 405), the stumble B (blue No. 403), etc. are raised.

[0062]As said fat dye, tetrabromofluorescein (red No. 223), dibromofluorescein (orange No. 201), etc. are raised.

[0063]As for said color, it is preferred among an aquosity undiluted solution to be blended further 0.5 to 10% of the weight 0.1 to 15% of the weight. There is a tendency which becomes insufficient [ the dyeing effect ] when loadings of said color are less than 0.1 % of the weight, when a difference of a color of a deposit layer and a color of the hair before processing is large, a color of the hair before a deposit layer and processing has a difference, and sense of incongruity arises. On the other hand, if 15 % of the weight is surpassed, it will become difficult to blend with an aquosity undiluted solution.

[0064]As an ingredient of said others, polyhydric alcohol, higher alcohol, an oil component, a plasticizer, a high molecular compound, a pH adjuster, etc. are raised.

[0065]Said polyhydric alcohol is used as a solvent, or A solubilizing agent, a moisturizer, It is used as a sense-of-heat grant agent etc., and For example, ethylene glycol, propylene glycol, A 1,3-butylene glycol, glycerin, xylitol, sorbitol, a diethylene glycol, dipropylene glycol, triethylene glycol, a polypropylene glycol, diglycerol, a polyethylene glycol, etc. are raised.

[0066]Said higher alcohol A hairdressing adjuvant, re-styling spritz or fizz, foam quality, It is used as a foam stabilizer which adjusts foam specific gravity etc., for example, lauryl alcohol, cetyl alcohol, stearyl alcohol, myristyl alcohol, oleyl alcohol, lanolin alcohol, hexyldecanol, isostearyl alcohol, etc. are raised.

[0067]Said oil component is used for the purpose of it being used as a solvent of an oil-soluble ingredient, or adjusting the characteristics, such as the pliability of a deposit layer, etc. raising a using feeling. As said oil component, for example

Methylpolysiloxane, octamethyl trisiloxane, A decamethyl tetra siloxane, octamethylcyclotetrasiloxane, Silicone, such as decamethyl cyclopentasiloxane and a methylphenyl polysiloxane; Myristic acid isopropyl, Octanoic acid Sept Iles, myristic acid octyldodecyl, pulmitic acid isopropyl, Lauric acid hexyl, butyl stearate, lactic acid Sept Iles, oleic acid oleyl, Ethyl acetate, diethyl phthalate, phthalic acid diethoxyethyl, succinic acid diethoxyethyl, Ester oil, such as malate diisostearyl; Pentane, hexane, Hydrocarbon, such as squalane, squalene, a liquid paraffin, isoparaffin, and kerosene; Lauric acid, Higher fatty acid, such as myristic acid, pulmitic acid, stearic acid, and oleic acid; Yellow bees wax, Lows, such as lanolin; fats and oils, such as an avocado oil, a turtle oil, corn oil, a mink oil, olive oil, rapeseed oil, sesame oil, castor oil, linseed oil, jojoba oil, germ oil, palm oil, and palm oil, etc. are raised.

[0068]Said plasticizer is used in order to adjust the characteristics, such as stiffness of a deposit layer, and pliability. As said plasticizer, for example Citrate; diethyl phthalate, such as citrate acetyl trimethyl \*\* acetyl tributyl citrate, Phthalic ester, such as dibutyl phthalate, dioctyl phthalate, phthalic acid Gia Mill, and diethylhexyl phthalate; Tributyl phosphate, Phosphoric ester, such as tricresyl phosphate; adipate, such as isobutyric acid and acetic acid sucrose, methylphthalyl methyl glycolate, ethylphthalyl ethyl glycolate, diethyl adipate, and dibutyl adipate, etc. are raised.

[0069]Said high molecular compound adjusts viscosity of an aquosity undiluted solution, when breathe it out by gel, or it enlarges regurgitation particles and raises the adhesion of an aquosity undiluted solution, when carrying out the regurgitation of it by mist shape, or it is foamy and the regurgitation is carried out, it strengthens liquid membrane intensity of a bubble, and it is used for the purpose of raising foam stability. As said high molecular compound, for example Agar, casein, dextrin, Gelatin, pectin, starch, sodium alginate, methyl cellulose, Ethyl cellulose, hydroxyethyl cellulose, hydroxypropylcellulose, A nitrocellulose, crystalline cellulose, denaturation potato starch, polyvinyl alcohol, polyvinyl methyl ether, a polyvinyl pyrrolidone, a carboxyvinyl polymer, sodium polyacrylate, etc. are raised.

[0070]Said pH adjuster is used in order to stabilize an aquosity undiluted solution and an aerosol composition in consideration of stimulativeness to scalp, or in order to lessen corrosion to an aerosol can filled up with an aerosol composition. As said pH adjuster, organic acid, such as citrate, lactic acid, malic acid, succinic acid, adipic acid, tartaric acid, glycolic acid, phthalic acid, malonic acid, ascorbic acid, and acetic acid, a sodium dihydrogenphosphate, potassium carbonate, sodium bicarbonate, etc. are raised, for example.

[0071]An aquosity undiluted solution used for an aerosol composition of this invention, After blending a method of blending resin which neutralized beforehand an ingredient of said lower alcohol, a surface-active agent, an active principle, a color, and others with alkali chemicals to an aquosity undiluted solution added if needed, or each ingredient, it is manufactured by a method of neutralizing resin in an aquosity undiluted solution.

[0072]Thus, as for pH in 20 \*\* of an obtained aquosity undiluted solution, it is preferred that it is 6.5-8.0, and also 6.7-7.8. When the pH of an aquosity undiluted solution is lower than 6.5, resin deposits easily in an aquosity undiluted solution or an aerosol composition,

and when pH surpasses 8.0, on the other hand, there is a tendency for corrosiveness to a stimulus and a container to the skin to become strong.

[0073]An aerosol composition of this invention is obtained by filling up an aerosol can with said aquosity undiluted solution and a liquefied gas, and mixing. An aerosol can may be filled up, after mixing an aquosity undiluted solution and a liquefied gas beforehand and manufacturing an aerosol composition.

[0074]Said liquefied gas is an ingredient for carrying out the regurgitation of the aquosity undiluted solution with gestalten, such as a bubble, mist, and gel, and liquefied petroleum gas which is butane, propane, and these mixtures, wood ether, these mixtures, etc. are raised as a liquefied gas, for example. A liquefied gas may be mixed and used with liquefied hydrocarbon, such as pentane and hexane.

[0075]As for a compounding ratio (weight ratio) of said aquosity undiluted solution and a liquefied gas, it is preferred that it is aquosity undiluted solution / liquefied gas =99.5 / 0.5 - 50/50, further 99 / 1 - 60/40. When a compounding ratio of an aquosity undiluted solution is larger than 99.5 % of the weight, an effect which blends a liquefied gas is hard to be acquired, when smaller than 50 % of the weight, it is easy to separate an aquosity undiluted solution and a liquefied gas, and there is a tendency which becomes difficult to breathe out a uniform constituent.

[0076]About a discharge mode of an aerosol composition of this invention, post expansion gel etc. to which it foams after breathing out by spray form and gel to which it foams in respect of adhesion after breathing out by a bubble, mist shape (spray state), gel, or mist shape are raised. It is desirable from a point that apply and are easy to lengthen on the hair that to which it foams on the hair like a bubble, spray form, and post expansion gel among these discharge modes, and a deposit layer adheres easily unevenly and thickly.

[0077]It can be considered as aerosol products by filling up an aerosol can with said aquosity undiluted solution and a liquefied gas, and subsequently attaching a discharge member. An aerosol can consists of a package body which has resistance to pressure, and an aerosolvalve. As said package body, glass containers, such as products made of resin, such as metal, such as aluminum and tin, and polyethylene terephthalate, or resisting pressure glass, can be used. It is preferred to shrink a PE liner which can use a double container provided with a contractile PE liner or a piston of working, and fills up an inside of a container with an aerosol composition in this case, or to be filled up with an application-of-pressure agent which makes a piston move. It is preferred to use compressed gas, such as nitrogen, carbon dioxide, or compressed air, as an application-of-pressure agent. An aerosolvalve is attached to a package body, and makes an aerosol can an airtight condition, and a valve for carrying out the regurgitation of the aerosol composition by regurgitation operation is said.

[0078]Thus, if an aerosol composition obtained is given to the hair, on the hair surface, a deposit layer more than specific thickness will be formed, and one 1 hair will become thick. As a result, high density concentration of the hair can be made high simply and certainly, and many hairs can be shown.

[0079]

[Example]Although this invention is explained in detail based on an example below, this inventions are not these things limited to seeing.

[0080]

Preparation <an undiluted solution presentation of Example 1> (% of the weight) of Examples 1-3 and the comparative example 1 - 2 aquosity undiluted solution polyurethane (\*1) 65.0 mica black . 5.095% ethanol 15.0 polyoxyethylene Sept Iles [ (20) ] ether (\*2) 1.0 polyoxyethylene methylpolysiloxane copolymer (\*3) 1.0 decamethyl cyclopentasiloxane (\*4) 5.0 perfume . 0.3 bridge-construction type methylpolysiloxane polyoxyethylene alkyl (C12-14)

Ether (12. E.O)-phenoxyethanol carboxyvinyl polymer sodium hydroxide purified water mixture (\*5) 3.0 methyl-parahydroxybenzoate (\*12) 0.1 citrate 0.09 purified water 4.51  
\*\* Total 100.0[0081]The degree of neutralization of polyurethane is 100%.

[0082]

<An undiluted solution presentation of Example 2> (% of the weight)  
a crotonic acid-vinyl acetate neo decanoic acid vinyl copolymer (\*6) -- 15.0 mica black 5.095% ethanol 20.0 aminomethyl propanol 0.6 polyoxyethylene (20) polyoxypropylene (8) Sept Iles ether (\*7). 1.5 octamethyltetra siloxane (\*8) 5.0 perfume 0.2 denaturation potato starch (\*9) 3.0 methyl-parahydroxybenzoate (\*12) 0.1 purified water 49.6 \*\* Total 100.0[0083]The degree of neutralization of a crotonic acid-vinyl acetate neo decanoic acid vinyl copolymer is 38.7%.

[0084]

<An undiluted solution presentation of Example 3> (% of the weight)  
crotonic acid-vinyl acetate neo decanoic acid vinyl copolymer (\*6) 15.0 mica black 3.0 my -- a turnip -- loun 3.095% ethanol 20.0 triethanolamine 0.6 polyoxyethylene (20) Sept Iles ether (\*2). 1.0 polyoxyethylene methylpolysiloxane copolymer (\*3) 1.0 octamethylcyclotetrasiloxane (\*8) 5.0 perfume 0.2 methyl-parahydroxybenzoate (\*12) 0.1 purified water 51.1 \*\* Total 100.0[0085]The degree of neutralization of a crotonic acid-vinyl acetate neo decanoic acid vinyl copolymer is 23.1%.

[0086]

Style form of the undiluted-solution presentation-former of the < comparative example 1: Super hard type > (% of the weight)  
acrylic acid octyl amide acrylic acid hydroxypropyl butyl methacrylate aminoethyl copolymer (\*10) 5.095% ethanol 20.0 aminomethyl propanol 0.89 polyoxyethylene (20) Sept Iles ether . 1.0 polyoxyethylene methylpolysiloxane copolymer 1.0 decamethyl cyclopentane siloxane 3.0 perfume 0.3 bridge-construction type methylpolysiloxane polyoxyethylene alkyl (C12-14)

Ether (12. E.O)-phenoxyethanol carboxyvinyl polymer sodium hydroxide purified water mixture 1.0 methyl parahydroxybenzoate 0.1 purified water The 67.71 sum total 100.0[0087]The degree of neutralization of an acrylic acid octyl amide acrylic acid hydroxypropyl butyl methacrylate aminoethyl copolymer is 100%.

[0088]

<An undiluted solution presentation of the comparative example 2> (% of the weight)  
polyurethane (\*1) 65.095% ethanol . 15.0 polyoxyethylene (20) Sept Iles ether (\*2). 1.0 polyoxyethylene methylpolysiloxane copolymer (\*3) 1.0 decamethyl cyclopentasiloxane (\*4) 5.0 perfume 0.3 bridge-construction type methylpolysiloxane polyoxyethylene alkyl (C12-14)

Ether (12. E.O)-phenoxyethanol carboxyvinyl polymer sodium hydroxide purified water mixture (\*5) 3.0 methyl-parahydroxybenzoate (\*12) 0.1 citrate 0.09 purified water 9.51  
\*\* Total 100.0[0089]The degree of neutralization of polyurethane is 100%.

[0090]The preparation aforementioned aquosity undiluted solution and liquefied petroleum gas of the aerosol composition were filled up with the following aerosol presentation into the aerosol can (pressure-resistant glassware: maximum injection quantity of 100 ml), and the aerosol composition was prepared.

[0091]

<Aerosol presentation> (% of the weight)

Undiluted solution 90.0LPG(\*11) 10.0 \*\* Total 100.0\*1 : [ Kana set P.U.R (trade name), ] By 30 % of the weight of polymer solid content by BASF A.G., 10 % of the weight of ethanol, and 60 % of the weight of purified water aminomethyl propanol (AMP), 100% neutralization \*2:BC20TX (trade name), Nikko Chemicals \*3:SH3771M (trade name), Dow Corning Toray Silicone \*4:DC345 (trade name), Dow Corning Toray Silicone \*5:BY29-119 (trade name), Dow Corning Toray Silicone \*6:RESIN28-2930 (trade name), \*7 made from Japanese NSC :P BC44 (trade name), Nikko Chemicals \*8:SH-244 (trade name), Dow Corning Toray Silicone \*9: Dry flow PC (trade name), product [ made from Japanese NSC ] \*10:Amphomer28-4910 (trade name), product [ made from Japanese NSC ] \*11:LPG0.34MPa (20 \*\*)

\*12: MEKKINSUM (trade name), Ueno Fine Chemicals Industry, Ltd. make [0092]The following examinations were carried out about examination / evaluation profitable \*\*\*\* aerosol composition. The evaluation result of each examination is shown in Table 1.

[0093](1) After making a part of hair-bundle (woolen 80-100 micrometers in diameter, and 10 cm in length) breathe out and carry out natural seasoning of the thickness measurement profitable \*\*\*\* aerosol composition of a deposit layer, ten hair of a hair-bundle was taken out, it photoed one at a time with the microphotograph, and the thickness of the hair of the portion to which the deposit layer adhered was measured. Before carrying out the regurgitation of the aerosol composition, it measured similarly, and the thickness (average value) of the deposit layer was computed from the formula (1).

[0094](2) The deposit layer when a photograph was taken with the adhesion condition aforementioned microphotograph of the deposit layer evaluated signs that it had adhered to hair.

[0095]Valuation-basis O: The deposit layer has adhered to hair unevenly.

x: The deposit layer has adhered to hair uniformly.

[0096](3) It was evaluated whether I would get the hair to breathe out an aerosol composition to 20 change panelists of hair concentration, and hair concentration would change to them externally.

[0097]Valuation-basis O: The person who estimated that the hair looked deep is 16 or more persons.

\*\*: There are 10-15 persons who estimated that the hair looked deep.

x: The person who estimated that the hair looked deep is nine or less persons.

[0098](4) It was evaluated whether I would get the hair to breathe out an aerosol composition to 20 change panelists of a hair type, and the hair type would change to them externally.

[0099]Valuation-basis O: The person who estimated that the hair type was not changing (comfortable) is 16 or more persons.

\*\*: There are 10-15 persons who estimated that the hair type was not changing (comfortable).

x: The person who estimated that the hair type was not changing (comfortable) is nine or less persons.

[0100]

[Table 1]

[0101]

[Effect of the Invention]If the aerosol composition of this invention is given to the hair, on the hair surface, the deposit layer more than specific thickness will be formed, and one 1 hair will become thick. As a result, high density concentration of the hair can be made high simply and certainly, and it is effective in the ability to show many hairs. The effect can be maintained for a long time, and sense of incongruity is not given to the hair.

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[Translation done.]